

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A synchronous rectification mode DC-to-DC converter power supply device, comprising:

a first switching power supply meanscircuit; and

a second switching power supply meanscircuit for carrying out synchronous rectification based on a drive pulse of the first switching power supply meanscircuit, wherein

the first switching power supply meanscircuit comprises:

an oscillation control meanscircuit operating by a DC input power supply and outputting a drive pulse;

a first drive meanscircuit for outputting a drive ~~waveform~~-voltage based on the drive pulse from the oscillation control meanscircuit;

a first switching element being driven by the output of the first drive meanscircuit;

a first rectifying meanscircuit having a positive electrode being grounded and a negative electrode being connected to the output of the first switching element; and

a first coil being connected to the output of the first switching element; and

the second switching power supply meanscircuit comprises:

a second drive meanscircuit for outputting a drive ~~waveform~~-voltage based on the

drive pulse from the oscillation control ~~means~~circuit;

a second switching element being driven by the output of the second drive ~~means~~circuit;

a second rectifying ~~means~~circuit having a positive electrode being ground and a negative electrode being connected to the output of the second switching element;

a third switching element being connected in parallel to the second rectifying ~~means~~circuit and driven by the output of the first drive ~~means~~circuit; and

a second coil being connected to the output of the second switching element; and

wherein the third switching element is turned on during an OFF period of the first switching element and turned off during an ON period of the first switching element.

2. (Currently Amended) The synchronous rectification mode DC-to-DC converter power supply device according to claim 1, wherein

an OFF period of the second switching element ~~includes an~~ is longer than the OFF period of the first switching element,

a timing when the first switching element is turned off is later than a timing when the second switching element is turned off, and

a timing when the second switching element is turned on is later than a timing when the first switching element is turned on.

3. (Currently Amended) The synchronous rectification mode DC-to-DC converter power supply device according to claim 1, further comprising a third switching power supply ~~circuit~~means for carrying out synchronous rectification based on the drive pulse of the second switching power supply ~~means~~circuit, wherein

the third switching power supply ~~means~~circuit comprises:

a third drive ~~means circuit~~ for outputting a drive ~~waveform voltage~~ based on the drive pulse from the oscillation control ~~means circuit~~;

a fourth switching element driven by the output of the third drive ~~means circuit~~;

a third rectifying ~~means circuit~~ having a positive electrode being grounded and a negative electrode being connected to the output of the fourth switching element;

a fifth switching element being connected in parallel to the third rectifying ~~means circuit~~ and being driven by the output of the second drive ~~means circuit~~; and

a third coil connected to an output of the fourth switching element

wherein the fifth switching element is turned on during an OFF period of the second switching element and turned off during an ON period of the second switching element.

4. (Currently Amended) The synchronous rectification mode DC-to-DC converter power supply device according to claim 3, wherein, ~~an OFF period of the second switching element includes an OFF period of the first switching element, and~~

an OFF period of the ~~third-fourth~~ switching element includes an is longer than the OFF period of the second switching element,

a timing when the second switching element is turned off is later than a timing when the fourth switching element is turned off, and

a timing when the fourth switching element is turned on is later than a timing when the second switching element is turned on.

5. (Currently Amended) The synchronous rectification mode DC-to-DC converter power supply device according to claim 1, further comprising a sixth switching element being connected in parallel to the first rectifying ~~means circuit~~ and driven by the output of the oscillation control ~~means circuit~~.

6. (New) The synchronous rectification mode DC-to-DC converter power supply device according to claim 1, further comprising a first waveform shaping circuit being connected between the first drive circuit and the third switching element,

wherein the first waveform shaping circuit includes a first resistor in parallel with a first capacitor.

7. (New) The synchronous rectification mode DC-to-DC converter power supply device according to claim 3, further comprising:

a first waveform shaping circuit being connected between the first drive circuit and the third switching element, and

a second waveform shaping circuit being connected between the second drive circuit and the fifth switching element,

wherein the first waveform shaping circuit includes a first resistor in parallel with a first capacitor, and

wherein the second waveform shaping circuit includes a second resistor in parallel with a second capacitor.